JCU Infrastructure Upgrade

4.127 Million reasons why we love Infrastructure
About JCU

• Campuses: Townsville, Cairns, Singapore & Brisbane
• Study Centers, Sites and Research Centres: Cover most of Nth Queensland
• Top 5% of Universities by Shanghai Jiao Tong Research
• 18000 students, 4100 staff
• Research Income of $50 million
Computing Infrastructure  

20 Years Ago

3 admin staff
400sqm
3 Main services

20 services

EA? What The!
I did nothing today and still got paid.
Computing Infrastructure

10 Years Ago

2 bar fridges
1st almost ‘real’
SAN 2Tb

40 services
Houston we have a problem!

- Uncontrolled Storage Growth - Demand Exceeding funding.
- Harvey Norman
- Staffing
- Performance
- No HA
- No DR
- TARDIS
What to do?

• In the old days
• New Age environment
  – Lets collaborate & discuss - 8 groups formed
  – Good idea or not?
  – Create an outcomes brief from Groups
• Formal RFP or NOT?
  – How to assess?
  – Panel members.
Considerations

- Forklift or Not?
- Bleeding, Leading or Tried & True
- Existing Skill Sets
- Unified Communications – spaghetti vs 1 cable
- Review Panel
  - Mgt with technical support.
  - BUT!
- Geographic
- Supporting Mobility
Other Considerations

• Service Unavailability Costs / JCU Reputation & confidence levels.
• Environmental & Carbon footprint
• Start to build HA/DR capability.
  – Clustered Services? Oracle RAC/VMware SRM
• Next Upgrade
• SET & FORGET
Computing Infrastructure

Today
Over 450 services

100Tb Corporate
500Tb Commodity
2 x 1000Slot Silo’s
2 x M5000’s/V490 DB Servers
>95% VM’s on Blade Chassis
High Performance Computing Infrastructure

800 cores

150Tb Storage

1 x 1000Slot Silo’s

DMZ requirements

Single Points of failures

Economies of scale?
Biggest Impact

- VMware
- SAN Maturity
- Standardisation – Win/RedHat
- DC Network – control & ownership
- Company Takeovers
- Software Licensing - CAUDIT
- Certification
- Governance
### Where to start?

- **Divide & Conquer**

<table>
<thead>
<tr>
<th>We did</th>
<th>We should have done</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate Storage</td>
<td>Commodity Storage / NAS / Backup</td>
</tr>
<tr>
<td>LB’s</td>
<td>Corporate Storage</td>
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<tr>
<td>10Gig IP</td>
<td>8Gig FC</td>
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<tr>
<td>8Gig FC</td>
<td>10Gig IP</td>
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<tr>
<td>Servers (Blade)</td>
<td>Servers (Blade) #2</td>
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<tr>
<td>Commodity Storage / NAS</td>
<td>LB’s #1</td>
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<tr>
<td>Backup</td>
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Futures

• Tiering and classing of services. Platinum, Gold, Silver etc.
• Test / Development to the cloud?
• D/R to the cloud – onshore or offshore?
• Sensitive Apps may eventually go; as vendors offer a cloud service.
• Unified Communications or Cloud first?
• Storage Virtualisation
• Cleanup & Simplification of Infrastructure
Futures

• Get to a stable platform and environment.
  – Ability to think and take stock.
• Dedicated EA Person.
  – Tagged to the Project Office
• Holistic design process.
• Confirm business demands and ensure we exceed requirements.
• ICTAC Buy In.
Summary Takeaways

- Auditing & Governance will continue to drive IT.
- Forks are us - Not.
- Pick your review panel well.
- Go Harvey Go Harvey – Cash discounts
- Warp Factor - Glacial
- Set & Forget
- No one cares except when!
- What works for you?
As Mgr of Infrastructure

- Staff not concerned about external influences.
- Minimising A/H Support
- Daily Grind - Gone
- Planning
- More Pro-Active than Re-Active
  - Monitoring & Support Roles

- Actions support 24 x 7
- Who’s going to do all this?
Questions